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CENTRAL INTELLIGENCE AGENCY

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DEVELOPMENT OF USSR GAS INDUSTRY

The gas industry is developing at a lively rate in the USSR. In postwar years a number of new gas deposits have been opened up in the Ukrainian SSR alone.

The Academy of Sciences Ukrainian SSR has conducted experiments in an industrial, experimental installation using a new process worked out by the Academy of Sciences USSR for the thermal processing of fuel -- semicoking of lignite. The experiments showed that from one ton of high-ash lignite with a moisture content of 50 percent it is possible to obtain dozens of cubic meters of gas with a calorific value of 4,000 calories per cubic meter, hundreds of cubic meters of lean gas with a calorific value of up to 900 calories per cubic meter, and many other valuable products.

Workers of the Power Engineering Institute imeni Krzhizhanovskiy of the Academy of Sciences USSR conducted interesting experiments in utilizing solid fuel at steam and electric power stations for power and chemical purposes. In this connection it was shown that, in converting an electric power station from supplying power only to supplying power and chemical products, a 25-percent increase in the consumption of coal per boiler with productive capacity of 60 tons of steam per hour made it possible, without lowering the capacity of the electric power station, to obtain 30,000 cubic meters of high-calorie gas and 20 tons of tar daily. This amount of gas would be adequate for the gas supply for a city with a population of 40,000.

At present, millions of cubic meters of high-calorie gas are carried off into the atmosphere. At two cracking plants alone more than 20,000 cubic meters of cracking gas with a calorific value of 14,000 calories per cubic meter are carried off into the air daily. This gas could be made available as the gas supply for a city with 50,000 inhabitants at a small expense.

At one Ukrainian oil field nearly 10,000 cubic meters of petroleum gas goes off into the atmosphere each day. From this wastage it would be possible to organize the regular fueling of nearly 300 gas-cylinder vehicles.

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The fast rate of development of the petroleum industry and in particular the approximate doubling of the capacity of plants for the primary processing of petroleum during a 5-year period and the 2.7 times increase in the capacity of cracking plants planned by the leaders of the Party Congress, create conditions for the formation of large supplies of valuable carbureted hydrogen gases. Workers of the petroleum and gas industries are faced with the task of full utilization of these gases for motor fuel, as raw materials for the chemical industry, and, in specific instances, to supply cities and workers' settlements with gas.

As a result of the fast development of the USSR metallurgical industry and coke by-products industry, supplies of coke gas and blast furnace gas have multiplied. The Party Congress directives provide for an 80-percent increase in coke-producing capacity. This will mean a corresponding increase in the supplies of coke gas.

Proper and efficient utilization of the coke and blast furnace gas in the area of the combines of the Donbass, the Dnepr, the Urals, Siberia, and the Far East is an important task of the national economy. Although Soviet metallurgists have worked considerably on increasing the efficient use of industrial gases, nevertheless it is impossible to consider the task solved. Tens of millions of cubic meters of coke gas and, in particular, blast furnace gas are carried off into the atmosphere, and, in a number of cases, coke gas is used to heat coke batteries and as a boiler fuel, although less valuable types of fuel could be used for these purposes.

In the coke by-products plant in the city of Yenakiyevo a considerable amount of gas is carried off into the atmosphere. Meanwhile, the Yenakiyevo-Makeyevka gas pipeline, constructed in 1941 and under the supervision of the Ministry of the Coal Industry, is inactive and is being dismantled. A cement plant of the Ministry of Construction Materials Industry USSR located near the metallurgical combine requires coal, but the construction of one kilometer of gas pipeline would make the excess coke gas available to this plant.

In Stalino a gas pipeline, 450 millimeters in diameter and several kilometers long, has been laid from the Rutchenskovskiy and Smolyaninovskiy coke by-products plants to the machine-building plant of the Ministry of Agricultural Machine Building, but the plant continues to operate on fuel transported from a distance, without bothering to have the gas pipeline put into operation. In the city of Stalino the gas supply is inadequate for extending domestic supplies; at the same time, there is considerable excess gas in Makeyevka, 14 kilometers away. At the Khar'kov Coke By-Products Plant, every year tens of millions of cubic meters of high-calorie gas are carried off into the atmosphere; with a small capital outlay, this gas could be used in the city economy.

Gas generators are one of the most important devices for producing gas from local fuels. In the new Five-Year Plan, generator gas should play an important role in extending the supplies of substitutes for liquid petroleum fuel in power engineering, industry, transport, and agriculture. However, not enough attention has been devoted to developing the gas generator industry and not a single plan has been drawn up for the introduction of mobile or stationary gas generators.

The conversion of engines to gas saves from 400 to 700 kilograms of petroleum fuel per year per horsepower. In the Ukrainian SSR dozens of small electric power stations, not counting other power installations, operate on

petroleum fuel and have a total capacity of nearly 200,000 horsepower. Conversion of these electric power stations alone to generator gas would free up to 100,000 tons of petroleum fuel per year.

The Ministry of Ferrous Metallurgy is providing pipes with extrathick walls to be used in laying city gas pipelines; as a result, 30-50 percent more metal is consumed in the construction of gas pipelines than should be. Production of pipes from substitute metals must be organized.

The Ministry of Machine and Instrument Building is not engaged in improving the designs and extending the assortment of domestic gas fixtures but is even curtailing the construction of gas apparatus from year to year, despite the fact that the prospects for developing the gas industry are good.

One of the serious hindrances hampering the rate of development of the gas industry is the lack of a single Union department to solve questions connected with the extraction, production, and most correct utilization of the enormous supplies of gas in the national economy.

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